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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/703,391	11/07/2003	Michael Albert Helmbrecht	IRIS-P0002	9202

23349 7590 03/03/2005
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EXAMINER

STERLING, AMY JO

ART UNIT	PAPER NUMBER
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3632

DATE MAILED: 03/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/703,391

Applicant(s)

HELMBRECHT, MICHAEL
ALBERT

Examiner

Amy J. Sterling

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-21 is/are pending in the application.
- 4a) Of the above claim(s) 14-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is the **Final Office Action** for application number 10/703,391 Deformable Mirror Method and Apparatus Including Bimorph Flexures and Integrated Drive, filed on 11/7/03. Claims 2-21 are pending. This **Final Office Action** is in response to applicant's reply dated 12/20/04. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Election/Restrictions

Newly submitted claims 14-21 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

- I. Claims 2-13, drawn to an apparatus of a bimorph flexure, classified in class 359, subclass 223.
- II. Claims 14-21, drawn to a method of forming the device, classified in class 117 subclass 20.

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process of making could be used for making a semi-conductors and associated materials

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 14-21 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

Claims 2-5, 8-10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 6759787 to Miller et al.

Miller et al. teaches a platform (14) connected with a set of bimorph flexures (16) that elevate the platform (14), the flexures which can be made of two layers, one inner and one outer of two different materials with substantially similar coefficients of thermal expansion such as silicon nitride and polysilicon (See Col. 7 lines 59-65) deposited under different conditions, the materials having substantially different intrinsic residual stress characteristics. Miller et al. teaches wherein each bimorph flexure has a

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curvature not substantially sensitive to changes in temperature, but resulting from the different in the intrinsic residual stress characteristics

Claim Rejections - 35 USC § 103

Claims 6, 7, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over 6759787 to Miller et al.

Miller et al. discloses the claimed invention except for its does not specifically recite that the coefficients of thermal expansion are different by 1000 or more or specifically teach how the layers are extended over each other. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have this range of thermal expansion ratio, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Aller, 105 USPQ 233.

It would also have been obvious to have extended the two materials partially over each other in order to change the residual stress of the device. This also being merely an optimization of dimensions of the device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teachings of Miller et al. to have optimized the dimensions of the device including.

Response to Arguments

The applicant has argued that Miller et al. does not show that the materials have substantially similar coefficients, citing that silicone nitride and polysilicon are two such materials. Miller et al. teaches that these two materials can be used in conjunction with each other as shown above and therefore Miller et al. meets the limitations of claim 2.

Conclusion

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action. Any inquiry concerning this communication should be directed to Amy J. Sterling at telephone number 703-308-3271. The examiner can normally be reached (M-F 8 a.m.-5:00 p.m.). If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Leslie Braun can be reached at 703-308-2156. The fax machine number for the Technology center is 703-

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872-9306 (formal amendments) or 703-308-3519 (informal amendments/communications). Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist at 703-308-2168.



AJS
Amy J. Sterling
2/28/05



RAMON O. RAMIREZ
PRIMARY EXAMINER